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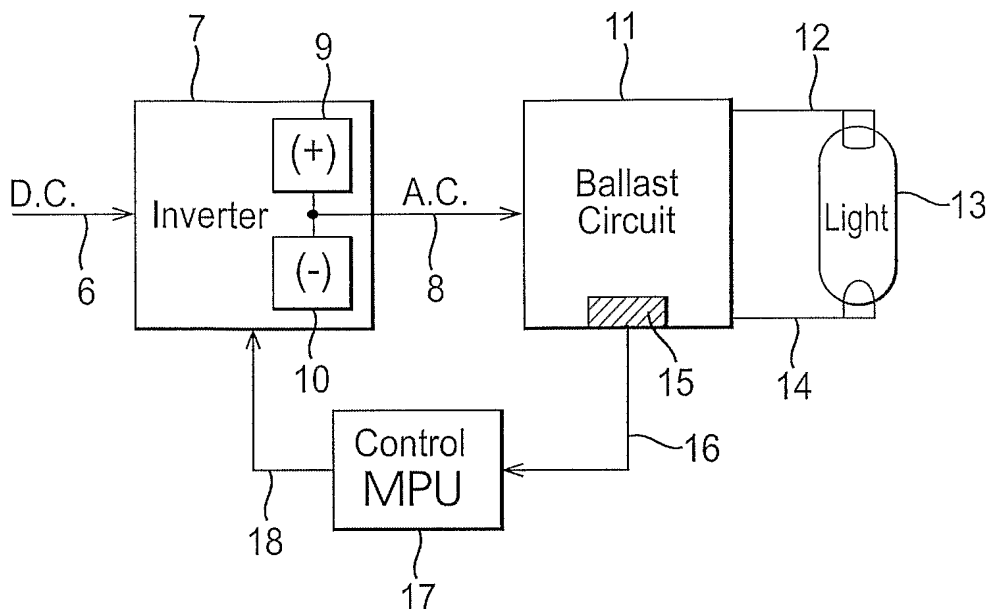
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(54) Title: APPARATUS AND METHOD FOR CONTROLLING DISCHARGE LIGHTS



(57) Abstract: Apparatus and method for supplying AC power (*e.g.* from an inverter) to a discharge light *via* a ballast circuit formed by a resonant circuit, and controlling the frequency of the AC power signal so as to operate below the natural resonance frequency of the ballast circuit in use after the discharge light has "struck".

WO 2005/062683 A2

APPARATUS AND METHOD FOR CONTROLLING DISCHARGE LIGHTS

The present invention relates to apparatus and methods
5 for controlling discharge type lights, such as
fluorescent lights and the like.

Discharge lights operate by causing electricity to flow
between two electrodes separated by an inert gas such as
10 argon or krypton with a small amount of a conduction
element such as mercury or xenon which may be in both
liquid and vapour form. Electrical conduction, through
the inert gas, is instigated by supplying a voltage to
the electrodes of sufficient magnitude to cause electrons
15 to migrate through the inert gas from one electrode to
another. While travelling towards the anode (positive
potential) electrode, electrons will typically collide
with atoms of the conduction element with sufficient
kinetic energy to ionise its vapour atoms and also
20 vapourise the elements liquid atoms, thereby producing
positive ions and further free electrons within the gas.
Thus, a gas plasma of positively and negatively charged
particles is produced. Electrons of the plasma continue
to stream towards the anode of the electrodes while the
25 much heavier positive ions of the plasma are accelerated
towards the cathode thereof. This streaming of electrical
charge sustains an electrical discharge within the
discharge light.

30 Collisions within the plasma between electrons and
ionised atoms of the conducting element causes the
emission of light photons from the plasma as post-
collisional ions relax from an excited state (caused by
collision) to a ground state. In this way, electrical